

**Remarks**

**I. Status of Claims**

Claims 1-2, 5-8, and 10-11 are currently pending in the application. Claims 1, 7, and 11 are independent.

Claims 1-2, 5-8, and 10-11 stand rejected under 35 USC 103(a) as being unpatentable over Kawashima *et al.* (US 6,851,258) (hereinafter “Kawashima”) in view of Tashiro *et al.* (US 6,662,480) (hereinafter “Tashiro”) and Schaller *et al.* (US 6,948,311)(hereinafter “Schaller”).

The Applicant has carefully reviewed the rejections and respectfully requests reconsideration of the rejections in view of the following remarks.

**II. Pending Claims**

Independent claims 1, 7, and 11 stand rejected under 35 USC 103(a) as being unpatentable over Kawashima in view of Tashiro and Schaller.

The Applicant respectfully submits that claim 1 is patentable over the cited references at least because it recites “increase the temperature of the catalyst” and “the apparatus executes burn-up control, in which performance and stopping of concentrated intermittent fuel addition to a section of the exhaust system that is upstream of the catalyst are repeated a predetermined number of times.”

The Applicant respectfully submits that claim 7 is patentable over the cited references at least because it recites “increase the temperature of the catalyst” and “executing burn-up control, in which performance and stopping of concentrated intermittent fuel addition to a section of the exhaust system that is upstream of the catalyst are repeated a predetermined number of times.”

The Applicant respectfully submits that claim 11 is patentable over the cited references at least because it recites “increase the temperature of the catalyst” and “the control unit executes burn-up control, in which performance and stopping of concentrated intermittent fuel addition to a section of the exhaust system that is upstream of the catalyst are repeated a predetermined number of times.”

The present application concerns an exhaust purifying apparatus for an internal combustion engine. The apparatus estimates an accumulation amount of particulate matter trapped about a catalyst in an exhaust system. When the estimated accumulation amount is equal to or more than a permissible value, the apparatus executes PM elimination control for supplying a unburned fuel component to the catalyst to increase the temperature of the catalyst and to burn the trapped particulate matter. The apparatus sets the estimated accumulation amount to zero at the completion of the PM elimination control. When execution of the PM elimination control becomes possible after suspension of the control, the apparatus resumes the PM elimination control even if the accumulation amount of particulate matter about the catalyst is less than the permissible value. Then, at a final stage of the PM elimination control, that is, when the estimated accumulation amount is less than a determination value that is slightly more than zero, the present application executes burn-up control, in which performance and stopping of concentrated intermittent fuel addition to a section of the exhaust system that is upstream of the catalyst are repeated a predetermined number of times.

In other words, in the present application, a concentrated intermittent fuel addition increases the catalyst bed temperature to burn up the particulate matter that is likely to be deposited at the exhaust upstream end of the particulate filters. See 13: lines 7-22 of the present application.

As indicated on page 3 of the Office action, by the Examiner's own admission, Kawashima does not teach or disclose a device or method which "at a final stage of the PM elimination control when the estimated accumulation amount is slightly more than zero, the apparatus executes burn-up control, in which performance and stopping of concentrated intermittent fuel addition to a section of the exhaust system that is upstream of the catalyst are repeated a predetermined number of times."

In order to cure this deficiency, the Office Action cites Schaller. In FIG. 3, and in claim 4, Schaller discloses "in a third phase from time t3, a quantity of uncombusted fuel, which is shown by dotted lines, is intermittently set to a constant value." However, in contrast to the present invention, in Schaller, uncombusted fuel is merely added to maintain a temperature of the particulate filter at a constant value, but Schaller does not disclose increasing the temperature of

the catalyst bed temperature to burn up the particulate matter that is likely to be deposited at the exhaust upstream end of the particulate filter.

Thus, for at least these reasons, the Applicant respectfully submits that neither Kawashima, Tashiro, or Schaller, either alone or in combination, teach or suggest the exhaust purifying apparatuses or methods recited in Applicant's claims. The Applicant respectfully submits that the Applicant's exhaust purifying apparatuses or methods are not suggested by the references, and it is not proper under 35 U.S.C. § 103 to use Applicant's application as a blueprint to pick and choose unrelated features to reproduce, in hindsight, Applicant's invention. Moreover, even using the improper hindsight reconstruction, none of these references suggests the exhaust purifying apparatuses or methods claimed.

For at least these reasons, claims 1, 7, and 11, as well as any of their dependent claims, are patentable over the cited references.

### **III. Conclusion**

In light of the above discussion, Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance. The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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